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## INTELLIGENCE AND PIGMENTATION OF HAIR AND EYES IN ELEMENTARY SCHOOL CHILDREN

By G. H. ESTABROOKS, Colgate University

The following extracts deal with material which the writer collected for the Harvard Growth Study in the years 1924-1926. One of them shows a definite correlation between pigmentation and 'intelligence' which is seen to be spurious only when certain factors, very easily overlooked, are taken into account.

The pigmentation of hair and eye was secured for the entire elementary school population of New Rochelle, N. Y., in Grades VI, VII, and VIII. The work was done without the aid of a color scale and consequently is somewhat subjective; but we are concerned here only with the gross divisions of light hair-dark hair and of blue eye-brown eye, and thus we eliminate those finer distinctions wherein confusion would be most liable to arise. All the children had previously been given the Dearborn 'C' Group Test.

TABLE I  
MEDIAN INTELLIGENCE QUOTIENTS  
(Dearborn 'C' test)

Pigmentation Groups	Boys	Girls		
	No.	I.Q.	No.	I.Q.
Blue eye	275	108.9	276	109.2
Brown eye	116	105.0	126	105.5
Mixed eye*	53	—	41	—
Light hair	214	109.1	220	109.2
Dark hair	230	106.3	223	105.1
Total	444	107.7	443	107.1

\*Mixed eyes are included merely to balance the numbers

In a previous article<sup>1</sup> the writer has pointed out why we cannot compare the intelligence quotients of different linguistic groups; but here we shall consider only the relation between pigmentation and intelligence within the North European group of these school children. Membership in this group requires both parents to be of North European extraction (stock originating in the British Islands, North Germany, or the Baltic States). Linguistic handicaps within such a school group in a city like New Rochelle are rare and probably insignificant.

Median intelligence quotients from the Dearborn 'C'-Test are given in Table I. The children are divided into gross pigmentation groups.

\*Accepted for publication May 24, 1928.

<sup>1</sup>G. H. Estabrooks, A proposed technique for the investigation of racial differences in intelligence, *Amer. Natur.*, 62, 1928, 76-87.

The blond child is definitely in the lead as regards 'intelligence.' We must consider, however, the fact of progressive pigmentation. A sample such as this naturally contains a wide range of ages, actually in this case running from 9-18 years. Owing to selective processes going on within the elementary grades we know that the younger children will, as a whole, be the more intelligent. The bright children will have passed on and a number of older retarded children will swell the ranks of the group with low intelligence. We should also strongly suspect the presence of progressive pigmentation. In other words, these younger children would be not only more intelligent but also more blond.

Table II gives the percentage of each pigmentation-group for each successive year.

TABLE II  
PERCENTAGE OF EACH PIGMENTATION-GROUP FOR EVERY AGE GROUP

Age Group	HAIR			
	Boys	Light	Dark	Girls
Nine	0.5	0.0		0.56
Ten	3.8	2.6		10.1
Eleven	19.8	14.0		22.0
Twelve	33.0	27.3		29.3
Thirteen	24.5	22.4		22.5
Fourteen	12.2	18.0		10.5
Fifteen	5.4	11.8		4.6
Sixteen and over	0.8	3.9		0.5
				EYES
Age Group	Boys		Girls	
	Blue	Brown	Blue	Brown
Nine	0.3		1.1	
Ten	3.3	0.8	10.8	5.0
Eleven	16.5	13.4	18.2	17.3
Twelve	29.7	36.2	29.8	23.2
Thirteen	26.0	17.6	23.9	31.3
Fourteen	14.0	16.0	10.8	13.2
Fifteen	8.4	10.1	4.0	9.2
Sixteen and over	1.8	5.9	1.4	0.8

The tabulated results show quite clearly a progressive pigmentation within this group and there can be little doubt that this stands at the basis of the positive results.

As a check, let us take another sample of North European children from the school systems of Medford and Revere, Massachusetts. Here we have an entire group at one age, the eighth year. They were given the Dearborn 'A' Group Test within a week of these observations.

Table III contains their median intelligence quotients. It indicates that no pigmentation-class had any superiority in intelligence as measured by this test. These results are typical of those obtained throughout the entire investigation at Medford and Revere. The Otis Group Test, the Primary Examina-

TABLE III  
MEDIAN INTELLIGENCE QUOTIENTS OF CHECK GROUP  
(Dearborn 'A' test)

Pigmentation Groups	Boys		Girls	
	No.	I.Q.	No.	I.Q.
Blue eye	85	104.9	132	105.8
Brown eye	33	112.6	37	111.2
Mixed eye	21	—	16	—
Light hair	78	104.7	112	106.6
Dark hair	61	104.8	73	108.2
Total	139	104.8	185	107.1

tion, Myer's Mental Measure, and the Stanford Revision likewise yielded negative results. In children of these ages, then, there is no demonstrable relationship between pigmentation and 'intelligence.'